



## GEN27 - Aortic Aneurysm Associated with Bicuspid Aortic Valve: Relation to Hemodynamics, Valve Morphology and Gender

**OBJECTIVE:** To explore the interactions between hemodynamics, severity of altered hemodynamics, valve morphology, gender and aortic dilatation in subjects with Bicuspid Aortic Valve.

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### ORGANIZATION

*Lead* Mary J. Roman MD

*Investigator:*

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### BACKGROUND AND RATIONALE

Bicuspid aortic valve (BAV) is associated with thoracic aortic disease, most commonly aneurysmal dilatation of the ascending aorta. In previous research, it was found that ascending aortic dilatation results from developmental and/or genetic abnormalities which are subsequently influenced by hemodynamic perturbations. In addition, a trend toward greater likelihood of functionally normal BAV among women compared to men as noted. It has also been reported that the fusion pattern of the BAV may predict hemodynamic features: fusion of right- and non-coronary leaflets is less common but more likely to be associated with significant stenosis or regurgitation whereas fusion of right- and left-coronary cusps is more strongly associated with aortic coarctation.

### DESIGN

- Aims:*
- To examine the prevalence of segment-specific aortic dilatation in patients classified by hemodynamic pattern (normal, predominantly regurgitant or stenotic valve; coarctation).
  - To examine the association of valve morphology (right-left fusion vs. right-non fusion) with hemodynamic pattern (normal aortic valve, predominant regurgitation, predominant stenosis, coarctation).
  - To examine the prevalence of segment-specific aortic dilatation as a function of valve morphology (which may or may not track with hemodynamic profile).

- To explore potential gender-related differences in hemodynamic features and valve morphology.
- To examine differences in prevalent and incident complications (dissection, need for valve and/or aortic surgery) in relation to valve morphology (related to hemodynamics and severity of aortic involvement) and gender, if sufficient data are available.

*Inclusion criteria:*

- All subjects diagnosed with a bicuspid aortic valve and ascending aortic aneurysm.

*Exclusion Criteria*

- Subjects without a pre-operative image

*Samples*

- None

*Data*

- Surgical and imaging data. Demographics and family history.

### CONCLUSIONS

*Results:*

- *Results pending*